

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number

10694926

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	26	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	26 minus 20 =	6
INDEPENDENT CLAIMS	2 minus 3 =	0
MULTIPLE DEPENDENT CLAIM PRESENT		<input type="checkbox"/>

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	27	Minus	** 26 = 1
Independent	2	Minus	*** 3 =
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY
TYPE OTHER THAN
OR SMALL ENTITY

RATE	FEES	RATE	FEES
BASIC FEE	385.00	OR BASIC FEE	770.00
X\$ 9=	54	OR XS18=	
X43=		OR X86=	
+145=		OR +290=	
TOTAL	939	OR TOTAL	

OTHER THAN
SMALL ENTITY OR SMALL ENTITY

RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
X\$ 9=	25-	OR XS18=	
X43=		OR X86=	
+145=		OR +290=	
TOTAL ADDIT. FEE	25-10	OR TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	Minus	**	=
Independent	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
X\$ 9=		OR XS18=	
X43=		OR X86=	
+145=		OR +290=	
TOTAL ADDIT. FEE		OR TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	Minus	**	=
Independent	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE	RATE	ADDITIONAL FEE
X\$ 9=		OR XS18=	
X43=		OR X86=	
+145=		OR +290=	
TOTAL ADDIT. FEE		OR TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

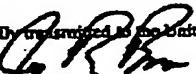
In re the application of
Guenther W. Brune
 Serial No: 10/694,926
 Filed: October 27, 2003
 For: ESTABLISHING POSITIONS OF LOCATING
 FIELD DETECTORS AND PATH MAPPING IN
 UNDERGROUND BORING TOOL
 APPLICATIONS

)
) Examiner: Matthew J. Smith
)
) Art Unit: 3672
) Attorney Docket: DCI-6CIP1D3
)
 Date: March 2, 2005

PATENT
 RECEIVED
 CENTRAL FAX CENTER

MAR 02 2005

CERTIFICATE OF ELECTRONIC TRANSFER: I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office on March 2, 2005.

Signed: 
 Jay R. Boyer

Commissioner of Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450

SIR: Transmitted herewith is an Amendment for the above application.

Small entity status of this application under 37 C.F.R. §§ 1.9 and 1.27 has been established
 No additional fee is required.
 Postcard included

The fee has been calculated as shown below:

(Col. 1)	(Col. 2)	(Col. 3)	SMALL ENTITY	NON-SMALL ENTITY
Claims Remaining	Previously Paid For	Present Extra	Rate	Additional Fee
Total Claims • 27	Minus **26	1	x 25 \$ 25	x 50 \$
Indep. Claims • 2	Minus *** 4	0	x 100 \$ 0	x 200 \$
First Presentation of Multiple Dependent Claim(s)				
• If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.				
** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.				
*** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space. The "Highest No. Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.				
Total \$ 25				

Applicant(s) hereby Petition(s) for an Extension of Time of ____ month(s) pursuant to 37 C.F.R. § 1.136(a). Enclosed please find PTO form PTO-2038 authorizing credit card payment of \$25.00 to cover the Small Entity Additional Claim fee.

The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 19-1685 (Order No. DCI-6CIP1D3) (a duplicate copy of this sheet is enclosed):

- Any additional fees associated with the submission of the attached papers.
- Any additional filing fees required under 37 C.F.R. § 1.16 for presentation of extra claims.
- Any extension or petition fees under 37 C.F.R. § 1.17.

Respectfully submitted,


 Jay R. Boyer
 Registration No. 39,903/83/2685 BBONNER 88888887 16694926

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of

Guenther W. Brune

Serial No: 10/694,926

Filed: October 27, 2003

For: ESTABLISHING POSITIONS OF LOCATING
FIELD DETECTORS AND PATH MAPPING IN
UNDERGROUND BORING TOOL
APPLICATIONSRECEIVED
CENTRAL FAX CENTER

MAR 02 2005

Examiner: Matthew J. Smith

Art Unit: 3672

Attorney Docket: DCI-6CIP1D3

Date: March 2, 2005

CERTIFICATE OF ELECTRONIC TRANSFER: I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office on March 2, 2005.

Signed: 
Jay R. BeyerAMENDMENT A

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The following remarks are intended as a full and complete response to the outstanding Office Action dated (mailed) December 2, 2004.

BEST AVAILABLE COPY

DCI-6CIP1D3

1 of 14

USSN 10/694,926

of the boring tool causes the moved detector and the other detector to both be in range of said electromagnetic locating signal. Claim 45 still further requires that the new location of the moved detector is established in proximity to an anticipated drilling path of the boring tool. It should be appreciated that these features provide for extension of drilling range in a way which is impractical, if not impossible, in vertical drilling applications such as taught by Waters. Applicants are unable to find any reasonable disclosure, teaching or suggestion of these features in the art of record.

Claim 46 depends directly from claim 44 and recites that the moved detector was out of range of the electromagnetic locating signal, prior to being moved from its initial position, as a result of advance of the boring tool and wherein the moved detector is within range of the electromagnetic locating signal, after being moved, such that the moved detector remains within range of the boring tool over a subsequent advance of the boring tool. These features, again are related to extending drilling range and are submitted to be absent from the art of record when taken in any reasonable combination.

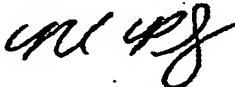
Claim 47 also depends from claim 44 and recites that sufficient additional advance of the boring tool along the anticipated drilling path causes the other detector to be out of range of the electromagnetic locating signal while the moved detector is in range and, thereafter, the other detector is moved to an advance location farther from the boring tool, but still in proximity to the anticipated drilling path. The relative locating signal is then transmitted for use in establishing the advance location of the other detector relative to the moved detector so as to also establish the absolute position of the other detector at the advance position in the region such that both detectors are again within range of the boring tool to receive the electromagnetic locating signal over further advance of the boring tool. The drilling range is thereby extended in a highly advantageous way while using only two detectors.

New claim 71 has been added which requires that the relative locating signal and the locating signal from the boring tool are dipole fields and is believed to be allowable over the art of record.

For all of the foregoing reasons, it is respectfully submitted that all of the Examiner's objections have been overcome and that the application is in condition for allowance. Hence, Applicant respectfully requests allowance of the claims under immediate consideration, and passage to issue of the application is solicited.

If the Examiner has any questions concerning this case, the Examiner is respectfully requested to contact Mike Pritzke at 303-410-9254.

Respectfully submitted,



Michael M. Pritzke
Reg. No. 37,913